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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,524	09/22/2003	Hideomi Koinuma	32307-191598	5810
26694	7590	04/10/2006	EXAMINER	
VENABLE LLP			MANDALA, VICTOR A	
P.O. BOX 34385			ART UNIT	
WASHINGTON, DC 20045-9998			PAPER NUMBER	
			2826	

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/665,524

Applicant(s)

KOINUMA ET AL.

Examiner

Victor A. Mandala Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 78-85 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 83-85 is/are allowed.
- 6) ☒ Claim(s) 78-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/15/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. The Applicant has amended the claims in the RCE filed on 3/15/06. The examiner has found an error in the listing of claims where claim 1 is presently amended, but is the same claim as filed on 9/22/05. The examiner is assuming the claim should have been canceled because in the remarks section of the amendment, it states that claim 1 is canceled. The remarks section also does not include any further discussion of the claim in regard to the rejection made in the final office action dated 12/15/06. The rejection of claim 1 will stand as is.
2. The Applicant has submitted an IDS filed with the RCE on 3/15/06. The examiner has considered the IDS and has found prior art that reads on some of the current claims. The rejection is stated below.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 62-181483 Mashahisa.

3. Referring to claim 1, a thin film device comprising, (JAPANESE PATENT ABSTRACT): a metal sulfide layer selected from the group consisting of manganese sulfide (MnS), magnesium sulfide (MgS), and calcium sulfide (CaS), (Figure 1 #4 Abstract Constitution line 6 CaMgS), which is formed on a single crystal silicon substrate, (Figure 1 #1), by epitaxial

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growth, (Abstract Constitution lines 1-3); and a thin film comprising an ionic compound, (Figure 1 #6 TaO Abstract Constitution line 8), which is formed on the metal sulfide, (Figure 1 #4), layer by epitaxial growth, (See \*\* below).

\*\* Initially and with respect to claim 1, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 78-82 are rejected under 35 U.S.C. 102(a) as being anticipated by Japanese Patent Application No. 2002-003297 with English Abstract.

4. Referring to claim 78, a thin film device comprising: a metal sulfide layer selected from the group consisting of manganese sulfide (MnS), magnesium sulfide (MgS), and calcium sulfide (CaS), (Figure 1 #2 English Abstract CaS, MnS, or MgS), which is formed on a single crystal silicon substrate, (Figure 1 #1), and a thin film comprising an ionic compound, (Figure 1 #4), which is formed on the metal sulfide layer, (Figure 1 #2), wherein the metal sulfide layer, (Figure 1 #2), is sandwiched between said single crystal silicon substrate, (Figure 1 #1), and said

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thin film, comprising an ionic compound, (Figure 1 #4), and wherein said thin film comprising said ionic compound is selected from the group consisting of a metal nitride thin film and a metal oxide film, (Figure 1 #4).

5. Referring to claim 79, a thin film device comprising: a metal sulfide layer selected from the group consisting of manganese sulfide (MnS), magnesium sulfide (MgS), and calcium sulfide (CaS), (Figure 1 #2 English Abstract CaS, MnS, or MgS), which is formed on a single crystal silicon substrate, (Figure 1 #1), and a thin film comprising an ionic compound, (Figure 1 #4), which is formed on the metal sulfide layer, (Figure 1 #2); and a platinum group layer, (Figure 1 #3), formed between said metal sulfide layer, (Figure 1 #2), and said thin film comprising said ionic compound, (Figure 1 #4).

6. Referring to claim 80, a thin film device, wherein said thin film comprises at least one selected from the group consisting of a metal nitride thin film, a metal oxide thin film, and a metal sulfide thin film, (Figure 1 #4).

7. Referring to claim 81, a thin film device, wherein a metal of said platinum group metal is selected from the group consisting of rhodium, iridium, palladium, and platinum or an alloy thereof, and wherein said platinum metal layer is in the form of a single layer or a multi-layer, (Figure 1 #3).

8. Referring to claim 82, a thin film device, wherein said ionic compound thin film is selected from the group consisting of a metal nitride thin film, a metal oxide thin film, and a metal sulfide thin film, (Figure 1 #4).

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*Allowable Subject Matter*

5. Claims 83-85 are allowed.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A. Mandala Jr. whose telephone number is (571) 272-1918. The examiner can normally be reached on Monday through Thursday from 8am till 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VAMJ  
3/30/06

  
**EVAN PERT**  
**PRIMARY EXAMINER**